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Water Preserve Area Feasibility Study

Alternative 1 Component Descriptions

These component descriptions have been modified from Alternative D13_R (selected as the initial draft plan for the C&SF Comprehensive Review Study) descriptions based on input from the WPA Hydrologic Evaluation. These components have been outlined in the component descriptions in a very conceptual way. Some additional level of incidental design has been expended on several of the components in order to allow them to be included in the subregional models.

The WPA Study Team has committed to the inclusion of fish & wildlife refugia/habitat/features where the component design allows this without compromising the function/purpose/intent of the component. Once the Team has selected a set of recommended components the actual fish & wildlife features will be designed/proposed as part of the recommended plan.

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Acme Basin B Discharge (OPE)

Geographic Region: Water Preserve Area – Palm Beach County

Component Title: Acme Basin B Discharge – SEE WPA COMPONENT MAP 1

Purpose: improve water quality discharge into WCA 1, attenuate peak flows and route discharge to regional storage reservoirs.

Operation: Develop small 357-acre wetland treatment area to treat Basin “B” runoff prior to discharge to WCA 1. The remainder of the discharge shall be sent to a 548-acre impoundment to attenuate peak flows until such time as the water can be discharged to one of two alternative locations: Agricultural Reserve Reservoir or the C-51 and Southern L-8 Reservoir (Palm Beach Aggregate) located west of the L-8 Canal.

Runoff will be directed to the impoundment until full, then additional runoff shall be directed to the Agricultural Reserve Reservoir. If the Agricultural Reserve Reservoir is full then runoff will be directed to the C-51 and Southern L-8 Reservoir. In Alternative 1, a portion of the runoff will be directed to the STA for treatment prior to discharge into the Refuge. Discharge to the Agricultural Reserve Reservoir or the C-51 and Southern L-8 Reservoir will require improvements to the existing Acme C-25 canal, the extension of this canal east to the LWDD E-1 canal and a small pump station to pump runoff into the LWDD E-1 canal. The LWDD E-1 canal may also require expansion in order to pass the proposed discharge north or south to the previously mentioned reservoirs.

Design:

- 1) Stormwater treatment area: approximately 357 acres with a maximum depth of 4 feet located in Section 24, south of Rustic Ranches. The inflow pump capacity will be 150 cfs and pull from the Acme C-1 canal when the canal reaches elevation 14.0 feet NGVD and will turn off when the stage drops to elevation 13.0 feet NGVD. It will discharge into a distribution canal which will distribute flows west into the STA via eight, 36 inch diameter CMP culverts, each 50 feet long. At the western end of the STA, another canal will collect flows and direct them into WCA 1 via the outflow pump station (150 cfs) if water quality targets for the Refuge have been met and the Refuge needs water. The outflow pump station will turn on when the stage in the STA reaches 18.3 feet NGVD and turn off when the stage drops to elevation 16.8 feet NGVD. Seepage will be collected and returned to the STA by two, 25 cfs pumps. They will be turned on when the stage in the seepage canal reaches 13.6 feet NGVD and turned off when the stage drops to elevation 13.0 feet NGVD.
- 2) Impoundment: approximately 548 acres with a maximum depth of 8 feet located in Section 34. The inflow pump capacity will be 350 cfs and will pull

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from the ACME C-25 canal when the stage in the canal reaches elevation 14.0 feet NGVD and will turn off when the stage drops to elevation 13.0 feet NGVD or the stage in the impoundment is 8 feet. It will discharge via gravity back into the Acme C-25 canal when there is available storage in either the Agricultural Reserve Reservoir or the C-51 and Southern L-8 Reservoir. The C-25 canal will be upgraded as necessary to pass the 350 cfs discharge and extended east from the boundary of the Acme Improvement District to the LWDD E-1 canal. A 350 cfs pump station will be constructed at the intersection of the extended C-25 and E-1. The pump will turn on when the stage in the C-25 canal is at elevation 13.5 feet NGVD and there is available storage in either the Agricultural Reserve Reservoir or the C-51 and Southern L-8 Reservoir. The pump will turn off when the stage in the C-25 canal is at elevation 13.0 feet NGVD. Seepage will be collected and returned to the STA by two, 65 cfs pumps. They will be turned on when the stage in the seepage canal reaches 13.6 feet NGVD and turned off when the stage drops to elevation 13.0 feet NGVD. There will be no seepage collection system on the south side of the impoundment.

- 3) Canal extensions or upgrades: approximately 15 miles – 1 mile of the Acme C-25 canal – canal extension and 1 mile upgrade, approximately 10 miles of the LWDD E-1 canal upgrade (4.5 miles south to C-16 Canal and 5.5 miles north to C-51 Canal) and 3 miles of the Acme C-24 canal upgrade.

Location: east of the Loxahatchee National Wildlife Refuge (WCA 1) at the southwestern end of the Acme Improvement District.

Counties: Palm Beach

Summary of modifications from D13R: 20 percent of the SWMM model flows were sent to The Loxahatchee Wildlife Refuge (WCA 1), 5 percent were directed to the STA to try to keep one half of a foot of water in the STA and 75 percent of the flows were sent to the impoundment and then sent to the Ag Reserve Reservoir.

Assumptions and Related Considerations:

- 1) Water quality treatment for runoff entering WCA 1 is provided by a chemical treatment/ stormwater treatment area in order to meet applicable water quality standards.
- 2) Existing flood protection shall be maintained.
- 3) Runoff from Basin A shall be separated from Basin B and directed northward to the C-51 Canal where it shall be discharged through the permitted discharge facilities.
- 4) Land is available for treatment, attenuation storage and canal upgrades.
- 5) Sufficient peak flow attenuation storage will be provided to maintain existing flood protection.

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Protect and Enhance Existing Wetland Systems along the Loxahatchee National Wildlife Refuge including the Strazzulla Tract (OPE)

Geographic Region: Water Preserve Area – Palm Beach County

Component Title: Protect and Enhance Existing Wetland Systems along the Loxahatchee National Wildlife Refuge (LNWR) including the Strazzulla Tract - SEE WPA COMPONENT MAP 2

Purpose: provide a hydrological and ecological connection to the Loxahatchee National Wildlife Refuge and expand the spatial extent of protected natural areas.

Operation: The additional lands to be purchased combined with the lands acquired will act as a buffer between higher water stages to the west and lands to the east that must be drained. This increase in spatial extent will provide vital habitat connectivity for species that require large unfragmented tracts of land for survival. It also contains the only remaining cypress habitat in the eastern Everglades and one of the few remaining sawgrass marshes adjacent to the coastal ridge. This area provides an essential Everglades landscape heterogeneity function.

Design:

- 1) A three-foot high berm will be constructed along the northern and eastern boundaries of the property to reduce runoff and losses to the east and allow deeper water depths.
- 2) A control structure will be constructed in LWDD L-23W canal and will consist of a gated culvert capable of passing 300 cfs. West of the control structure, the canal fluctuates according to the ground water table but doesn't exceed elevation 16.5 feet NGVD.
- 3) This feature also includes the acquisition of approximately 3,335 acres of land adjacent to WCA 1 including the Strazzulla Tract.

Location: east of WCA 1 in central Palm Beach County
Counties: Palm Beach

Summary of modifications from D13R: Construction of a three-foot high berm along the northern and eastern boundaries and a 300 cfs control structure in LWDD L-23W.

Assumptions and Related Considerations:

- 1) Water supply deliveries to LWDD via L-23W are not interrupted by the operation of the proposed control structure.

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Component VV

Geographic Region: Central Eastern Palm Beach County

Component Title: Agricultural Reserve Reservoir – SEE WPA COMPONENT MAP 3

Purpose: Increase water supply for central and southern Palm Beach County by capturing and storing water currently discharged to tide.

Operation: The reservoir will be filled during the wet-season from excess water pumped out of the western portions of the Lake Worth Drainage District (LWDD) (back pumped). Water will be released back to LWDD to maintain canal stages during the dry-season. As with the base cases, regional water will be supplied to the LWDD when water levels fall below 15.8 feet NGVD. Water will be back pumped into the reservoir when water levels are above 16.0 feet NGVD in the LWDD system canals.

In Alternative 1 of the Water Preserve Areas Feasibility Study, water will be sent to the impoundment from the C-16 Canal and LWDD canals via a new meandering delivery canal. This canal will pass through lands which were part of the original reservoir footprint. The actual reservoir footprint has been shifted south and has been squared off to reduce the length of levee required to surround the reservoir.

Aquifer Storage and Recovery (ASR) capacity improves water supply deliveries during dry seasons and droughts. Fifteen (15), 5-MGD capacity ASR wells are proposed with a total injection and recovery capacity of 75 MGD or about 116 cfs. Water from the reservoir will be injected when depths in the impoundment are above 1 foot. Water will be supplied from the reservoir up to the outflow capacity to meet local water supply demands before tapping water from the ASR system.

Design:

- 1) 1240 acres with a maximum depth of 12 feet (volume of 14,880 acre-feet) located west of US 441 and south of Boynton Beach Boulevard.
- 2) A new, meandering delivery canal (capacity of 600 cfs) will direct flows from LWDD E-1 and L-24 canals south to the reconfigured reservoir. A 3 foot high berm will be constructed east of the canal and west of SR 7. One, 600 cfs pump is proposed at the north end of the delivery canal which will pull flows from the LWDD L-24 and E-1 canals.
- 3) Inflow pump capacity = 850 cfs to be provided by one 600 cfs pump located north of the impoundment pumping from the meandering delivery canal and one 250 cfs pump pumping from the E-1 and LWDD canals. Each pump will have a pump on elevation of 16.0 feet NGVD and a pump off elevation of 15.0 feet NGVD.

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- 4) Outflow structure capacity = 500 cfs @ 4 feet head for water supply deliveries to the LWDD canal system. The structure will consist of 4 – 4 foot diameter gated culverts with a design head of 4 feet.
- 5) Emergency overflow structure to WCA 1 = 300 cfs consisting of 5 – 5 foot diameter gated culverts.
- 6) Seepage will be collected and returned to the reservoir by a canal to be located on the north, east and south perimeters of the reservoir and one 200 cfs pump located on the south end of the reservoir. Seepage from the northern half of the reservoir will be pumped back by the 600 cfs pump station located at the southern end of the meandering delivery canal. The control elevation of the seepage collection canal is 16.0 feet NGVD.

Summary of modifications from D13R: Reservoir footprint is modified to 1240 acres and shifted south. A new meandering delivery canal and levee berm are added. Pump capacities and seepage collection system are modified.

Location: The western portion of central Palm Beach County adjacent to WCA 1 and south of Boynton Beach Boulevard.

Counties: Palm Beach

Assumptions and related considerations:

- 1) Excess storage could be discharged to the LWDD during off peak times.
- 2) Conveyance may need to be improved in the LWDD canal system to pass the proposed 500 cfs discharge from the reservoir.
- 3) No operation changes in the LWDD.
- 4) Recovery rate of 70 percent for water stored by the ASR.
- 5) Water supply deliveries from the Loxahatchee Wildlife Refuge (WCA 1) to the LWDD canal system will be maintained in the existing delivery canal now located along the northern end of the reservoir.

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Component M

Geographic Region: Water Preserve Area - Palm Beach County

Component Title: Hillsboro Impoundment (aka Site 1) – SEE WPA
COMPONENT MAP 4

Purpose: Water supply storage reservoir to supplement water deliveries to the Hillsboro Canal during the dry-season.

Operation: The reservoir will be filled during the wet-season from excess water backpumped from the Hillsboro Canal. Water will be released back to the Hillsboro Canal to help maintain canal stages during the dry-season. If water is not available in the reservoir, existing rules for water delivery to this region will be applied. Aquifer Storage and Recovery (ASR) is proposed in conjunction with the reservoir to improve water supply during dry seasons and droughts. A total of thirty (30) 5 MGD capacity ASR wells will be included in this alternative (total injection and recovery capacity is 150 MGD or about 230 cfs). Water from the Hillsboro Impoundment will be injected into the ASR wells when stages in the impoundment are greater than 12.0 feet NGVD (0.5 feet of depth). Water will be recovered from the ASR wells when stages in the Hillsboro Canal are less than 7.0 feet NGVD.

For Alternative 1, the reservoir has been compartmentalized into three cells, two located north of the Hillsboro Canal and one south. The total acreage of the reservoir has also been reduced to 2,246 acres. The cell located south of the Hillsboro Canal has been configured to leave two existing borrow areas outside of the impoundment footprint. The L-36 borrow canal has been relocated along the southern and eastern limits of the southern cell with structure S-39A relocated east to the new intersection with the Hillsboro Canal. Conveyance of North Springs Improvement District Flows to the Hillsboro Canal will be maintained.

Design:

- 1) 2,246 acres with a maximum depth of 6 feet located north and south of the Hillsboro Canal. North of the Hillsboro Canal, seepage will be collected and returned to the reservoir by one 64 cfs pump located in the northeastern corner of the site. It will be turned on when the stage in the seepage collection canal is at elevation 9.5 feet NGVD and turned off when the stage drops to elevation 8.0 feet NGVD. Seepage south of the Hillsboro Canal will be collected in the relocated L-36 borrow canal and discharged to the Hillsboro Canal through the relocated S-39A structure.
- 2) Inflow pump capacity = 1000 cfs. Pump is turned on when the stage in the Hillsboro Canal is equal to 7.8 feet NGVD and turned off when the canal stage drops to elevation 7.6 feet NGVD. The pump will also turn off when the

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stage in the impoundment north of the Hillsboro Canal reaches 17.0 feet NGVD

- 3) Outflow structure capacity into the Hillsboro Canal for water supply deliveries from Site 1 = 200 cfs @ 4 feet of head and consists of four, 4 foot diameter CMP gated culverts, each 70 feet long.
- 4) Emergency outflow structure to the Hillsboro Canal consists of a 225 foot long weir with a crest at elevation 18.3 feet NGVD.
- 5) Thirty (30) – 5 MGD ASR wells (total capacity 150 MGD or about 230 cfs) to be located on the inside of the proposed eastern and southern perimeter dikes with horizontal supply wells located on the inside of the impoundment.

Location: The Water Preserve Area Land Suitability Analysis previously identified 2,246-acre site.

Counties: Palm Beach

Summary of modifications from D13R: Modify footprint to 2246 acres. Compartmentalize impoundment to optimize operations and reduce levee height requirements. Increase inflow pump to 1000 cfs and modify seepage collection system. Revise the production wells to deep horizontal wells. The L-36 borrow canal and S-39A structures are relocated.

Assumptions and related considerations:

- 1) Excess storage could be discharged to Water Conservation Area 2A if a treatment facility could be added to meet Everglades' water quality standards.
- 2) Recovery rate of 70 percent for water stored by ASR.
- 3) Conveyance of North Springs Improvement District flows to the Hillsboro Canal will be maintained.

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Component YY

Geographic Region: Water Conservation Area -Water Preserve Area - Lake Belt

Component Title: Divert WCA 2 flows to Central Lake Belt Storage - SEE WPA COMPONENT MAP 6

Purpose: Capture excess water in Water Conservation Area 2B (WCA 2B) to reduce stages above desired target levels in WCA 2B and to divert water through improved L-37 and L-33 Borrow Canals to 1) North East Shark River Slough (NESRS) to meet targets or 2) Central Lake Belt Storage Area.

Operation: Surface water in WCA 2B above target levels will overflow through 3 structures along L-35 and L-35A to the North New River Canal along with seepage from WCA 2B and will be pumped to the L-37 borrow canal. The North New River Canal, L-37 and L-33 borrow canals will be improved to accept this additional flow along with the seepage collected from WCA 3. This water will be pumped to NESRS if the Slough is below target levels or into a lined reservoir to be located south of the confluence of the L-33 borrow canal and the C-6 Canal referred to as the Central Lake Belt Storage Area (CLBSA). SEE COMPONENT S.

Design:

- 1) 3- diversion structures with 120 cfs capacity @0.5 feet of head and 350 cfs capacity @4.0 feet of head along the southern perimeter of WCA 2B to pass flows greater than targets.
- 2) Structure S-124 is removed. A basin divide structure will be located immediately downstream of the confluence of L-35A and L-35 borrow canals. It will have a control elevation of 4.25 feet NGVD in order to separate Water Conservation Area 2B overflow from water supply deliveries made southeast in the North New River Canal.
- 3) Construct a divide structure northeast of the easternmost WCA 2B diversion structure with a crest at elevation 6.3 feet NGVD to separate WCA 2B flows directed south.
- 4) 1,500 cfs pump station to divert overflow and seepage from the L-35 borrow canal to the L-37 borrow canal. Pump on when water levels in WCA 2B are 1.25 feet above target and pump off when water levels in WCA 2B drop below 1.0 foot above target.
- 5) Culvert with 1,500 cfs capacity to pass flows generated by both seepage collection in the L-35A and L-35 borrow canals and flows above targets in WCA 2B from the L-38 East borrow canal to the L-37 borrow canal.
- 6) Improved conveyance of L-37 and L-33 borrow canals to 3,000 cfs to handle WCA 2B flows plus seepage from WCA 3.
- 7) Remove S-9XN and S-9XS or improve structures to accommodate increased flows.

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Location: The overflow structures are located along the southern levee of WCA 2B. L-37 and L-33 borrow canal improvements are located east of the Protective levees and 0.5 mile west of US Highway 27 between the North New River Canal and the Miami Canal.

Counties: Broward

Summary of modifications from D13R: No change from D13R.

Assumptions and related considerations:

- 1) Prioritization of use of Central Lake Belt Storage Area water.
- 2) Telemetry systems will be required for all operable structures and pump station.

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Component O

Geographic Region: Water Preserve Area - Broward County

Component Title: Water Conservation Area (WCA) 3A and 3B Levee Seepage Management – SEE WPA COMPONENT MAPS 5 and 7

Purpose: Reduce seepage from WCAs 3A and 3B to improve hydropatterns within the Conservation Areas by allowing higher water levels in the borrow canals and longer inundation durations within the marsh areas that are located east of the WCAs and west of US Highway 27. Seepage from the WCAs and marshes will be collected and directed south into the Central Lake Belt Storage Area (not a component of the Broward County subregional model). This will maintain flood protection and the separation of seepage water from urban runoff originating in the C-11 Basin and Lake Okeechobee water supply deliveries.

Operation: The L-37 and L-33 borrow canals will be held at higher stages as part of the WCA 2 seepage collection and conveyance system (Component YY). Seepage collected in the L-37 and L-33 borrow canals and from the marsh areas will be directed into the WCA 2 seepage collection and conveyance system and directed south into the Central Lake Belt Storage Area or directly to the North East Shark River Slough.

Design: New levees will be constructed west of US Highway 27 from the North New River Canal to the Miami (C-6) Canal to separate seepage water from the urban runoff collected in the C-11 Diversion Impoundment and Canal (Component Q).

- 1) The L-37 and L-33 borrow canals will be controlled at higher stages, elevations 8.0 feet NGVD and 7.0 feet NGVD, respectively, as will the marshes located east of the WCAs. A control structure will be added in the L-37 borrow canal (S-O-02) just north of the S-9 pump station. It will consist of a gated spillway which will maintain the L-37 borrow canal at elevation 8.0 feet NGVD. Another control structure consisting of a gated spillway will be added in L-33 borrow canal (S-O-03) just north of its intersection with the C-6 Canal and will maintain the L-33 borrow canal at elevation 7 feet NGVD.
- 2) A divide structure will be added in the C-11 Canal, west of US Highway 27 to maintain a headwater stage of 7.0 feet NGVD and the separation of seepage water from urban runoff. Water from the C-11 west basin will be diverted south to the North Lake Belt Storage Area.

Location: Seepage collected in borrow canals along the existing eastern protective levees adjacent to WCA 3. Divide structure located in C-11 Canal west of US Highway 27.

Counties: Broward

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Summary of modifications from D13R: Addition of two control structures. One to maintain the L-37 borrow canal elevation at 8.0 feet NGVD and another to maintain the L-33 borrow canal elevation at 7.0 feet NGVD.

Assumptions and related considerations:

- 1) It is assumed that the seepage from the Water Conservation Areas meets the water quality standards necessary to achieve ecosystem restoration.

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Component Q

Geographic Region: Water Preserve Area - Broward County

Component Title: Western C-11 Diversion Impoundment and Canal -- to North Lake Belt Storage Area - SEE WPA COMPONENT MAPS 5 and 7

Purpose: Divert untreated runoff from the western C-11 basin that is presently discharged into Water Conservation Area 3A into the C-11 Stormwater Treatment Area (STA) / Impoundment prior to sending it south to the North Lake Belt Storage Area (NLBSA).

Operation: Runoff in the western C-11 Canal basin that was previously backpumped into Water Conservation Area 3A will be diverted into the C-11 STA/Impoundment and then discharged to NLBSA. If storage capacity is not available in the impoundment or NLBSA then the S-9 pump station will be used to provide flood protection for the western C-11 basin and runoff will be pumped into WCA-3A. To improve groundwater elevations in the eastern C-11 Canal basin, the S-9 seepage divide structure will be operated to maintain the western C-11 Canal stage at elevation 3.0 feet NGVD.

Design:

- 1) 2500 cfs diversion canal west of US Highway 27 between the C-11 and C-9 Canals and 2500 cfs conveyance capacity improvements to the C-9 Canal between S-30 and the diversion structure into NLBSA.
- 2) A 2500 cfs pump station in the C-11 Canal to direct runoff to the C11 STA/Impoundment (pump on elevation 4.0 feet NGVD and pump off elevation 3.0 feet NGVD or when the impoundment reaches 4 feet deep).
- 3) 1733-acre STA/Impoundment with a maximum depth of 4 feet.
- 4) Seepage collection canal and pumps for C-11 STA/Impoundment. Seepage collection canal system is maintained between elevations of:
6.3 and 6.8 feet NGVD by a 25 cfs pump (northern section)
5.0 and 5.3 feet NGVD by a 240 cfs pump (eastern section)
7.5 and 8.0 feet NGVD by an 80 cfs pump (western section)
- 5) 2200 cfs structure @ 4 feet of head to discharge from the impoundment to the US 27 west borrow canal.
- 6) A 4.5 foot high internal levee will ensure no short circuiting within the impoundment.

Location: The diversion canal is located west of US Highway 27 between C-11 and C-9 Canals. The C-11 STA/Impoundment is located northwest of the intersection of US Highway 27 and C-11 Canal.

Counties: Broward, Miami-Dade

Summary of modifications from D13R: Increase the footprint of the impoundment to 1733 acres and reconfigure the mitigation area by relocating 335 acres to the

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north extreme of the footprint. Add seepage collection system along the western perimeter of the impoundment east of US 27 and modify the seepage collection system operation. Relocate the impoundment's 2,200 cfs outflow structure from the southern end of the impoundment to the southwestern corner. Add an internal levee to prevent short-circuiting.

Assumptions and related considerations:

- 1) Flood protection component for FPL substation and mobile home park may be needed. For each facility, propose a 60 cfs pump with an on elevation of 6.0 feet NGVD and an off elevation of 5.0 feet NGVD.
- 2) Telemetry systems will be required for all operable structures and pump stations.

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Component R

Geographic Region: Water Preserve Area - Broward County

Component Title: C-9 Stormwater Treatment Area (STA)/ Impoundment - SEE WPA COMPONENT MAP 8

Purpose: Treatment of water supply deliveries from the North Lake Belt Storage Area (NLBSA) to the C-9, C-6/C-7 and C-2/C-4 Canals. Runoff is backpumped into the NLBSA from the western C-9 Canal basin and the western C-11 Canal. The C-9 STA/ Impoundment will provide treatment of urban runoff stored in the North Lake Belt Storage Area, groundwater recharge within the basin and seepage control of WCA 3 and buffer areas located west of the STA/ Impoundment.

Operation: Stormwater runoff stored in the NLBSA will be pumped into the C-9 STA/ Impoundment for treatment and then will be released to provide water supply deliveries based on salinity control targets to the C-6, C-7 and C-2, C-4 Canals. Seepage from the C-9 STA/ Impoundment will be collected and returned to the impoundment.

Design:

- 1) 1706-acre STA/ Impoundment with a maximum depth of 4 feet.
- 2) Inflow structure: 1000 cfs pump (from NLBSA, to be resized as needed) SEE COMPONENT XX. (Pump on when water supply deliveries are needed to C-6, C-7, C-4 and C-2 and water level in the NLBSA is above -20.0 feet NGVD or when the depth in the STA/ Impoundment is less than 4 feet above natural ground)
- 3) Outflow structure: Gravity structure with 1000 cfs capacity at 4 feet of head to C-6, C-7, C-4, and C-2 Canals for water supply deliveries.
- 4) Seepage Collection: A total of 200 cfs recycled into the impoundment area. Seepage will be collected along the western side of the STA by a 100 cfs pump with an on elevation of 8.0 feet and off elevation of 7.5 feet NGVD. Seepage will be collected along the eastern side of the STA by a 100 cfs pump with an on elevation of 3.0 feet and off elevation of 2.5 feet NGVD.

Location: Site identified by Water Preserve Area Land Suitability Analysis
Counties: Broward

Summary of modifications from D13R: Move northern boundaries of impoundment area below the existing borrow pit/mitigation area to minimize seepage losses. Relocate additional mitigation areas along the half mile wide north west strip of the impoundment footprint. Relocate internal levee. Modification of seepage collection system and inflow pump operation.

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Assumptions and related considerations:

- 1) Additional treatment facility needed if stored water is backpumped into Water Conservation Area 3A.
- 2) Telemetry systems will be required for all operable structures and pump stations

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Component SS

Geographic Region: Everglades Agricultural Area (EAA) and Miami-Dade County

Component Title: Reroute Miami-Dade County Water Supply Deliveries – SEE
WPA COMPONENT MAP 6

Purpose: Reroute water supply deliveries made to Miami-Dade County from the Miami and Tamiami Canals and Water Conservation Area 3 (WCA 3) to the North New River Canal due to the backfilling of the Miami Canal as part of the decompartmentalization of WCA 3.

Operation: Send water supply deliveries from Lake Okeechobee to Miami-Dade County southeast through the North New River Canal in the Everglades Agricultural Area (EAA) (L-20, L-19, L-18) to S-150. From S-150 send deliveries into L-38W and at the southern terminus of L-38W south through a 1500 cfs pump to the borrow canal along the west side of US Highway 27.

Design:

- 1) Double the capacity of the North New River Canal (L-18) south of the proposed EAA Storage Reservoir (see Component G – not a component of the South Broward subregional model) to convey additional water supply deliveries to Miami-Dade County as necessary.
- 2) Double the capacity of S-351 and S-150 to pass additional water supply deliveries to Miami-Dade County as necessary.
- 3) Improve conveyance in the L-38W borrow canal to 2000 cfs as necessary.
- 4) Construct an inverted siphon with 1500 cfs capacity to pass water supply deliveries from the L-38 West borrow canal to the US Highway 27 west borrow canal. This will maintain the separation of Lake Okeechobee water supply deliveries and WCA 2 seepage and overflow water.
- 5) Improve conveyance in the borrow canal on the west side of US Highway 27 between L-38W and the Miami Canal as necessary to pass the additional flows.
- 6) Pump intake at S-7 lowered to elevation 8.0 feet NGVD.

Location: EAA and Water Conservation Area 3.

Counties: Palm Beach, Broward, and Miami-Dade

Summary of modifications from D13R: No change from D13R

Assumptions and related considerations:

- 1) Operational flexibility is reduced since there is only one delivery route to Miami-Dade County (back-up routes have been eliminated).

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Component XX

Geographic Region: Water Preserve Area - Miami-Dade County

Component Title: North Lake Belt Storage Area (NLBSA) - SEE WPA
COMPONENT MAP 8

Purpose: In-ground reservoir to capture a portion of runoff from C-6, western C-11 and C-9 Basins. The in-ground reservoir with perimeter seepage barrier will allow storage of untreated runoff without concerns of ground water contamination. The stored water will be used to maintain stages during the dry season in the C-9, C-6, C-7, C-4 and C-2 Canals and to provide deliveries to Biscayne Bay to aid in meeting salinity targets.

Operation: Runoff from the C-6 basin (west of the turnpike), western C-11, and C-9 basins is pumped and gravity fed into the in-ground reservoir. Inflows cease when stages reach approximately 5.0 feet NGVD (0 feet above adjacent land elevation).

Outflows for water supply are pumped into the C-9 Storm Water Treatment Area (STA)/ Impoundment prior to delivery to the C-9, C-6, C-7, C-4 and C-2 Canals.

Water from the reservoir can be withdrawn down to a stage of -25 feet NGVD (up to 30 feet of working storage & maximum head on the seepage barrier).

Prioritization of outflows: If water levels in the NLBSA are from between +5.0 feet NGVD and 0.0 feet NGVD, flows will be discharged to Biscayne Bay via the C-2 Canal. If water levels in the NLBSA are from between 0.0 feet NGVD and -20 feet NGVD, flows will be discharged to C-9, C-6, C-7, C-4 and C-2 Canals only to prevent salt water intrusion. If water levels in NLBSA drop to levels between -20 feet NGVD and -25 feet NGVD, discharge will be limited to the C-9 Canal only to avoid water shortage restrictions.

The storage area is 2,910 acres in size and is used to capture a portion of the runoff from the C-6, C-9 and C-11 basins. (Note: SFWMM simulation assumes 5,120 acres of surface area. To simulate equivalent working storage volumes, the simulated water levels are higher from those prescribed here.)

Design:

- 1) Reservoir: 2,910 acres with subterranean seepage barrier extending down 120 feet below ground around the perimeter to enable drawdown during dry periods, prevent seepage and to prevent water quality impacts.
- 2) Inflow Structures: 2,500 cfs gravity structure @ 0.5 feet head, from C-11W. 600 cfs pump from C-9 (pump on 3.0 feet NGVD and pump off 2.5 feet NGVD). 300 cfs pump (pump on 3.5 feet NGVD and pump off 3.0 feet

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- NGVD) from C-6 Canal west of the proposed divide structure which will consist of a gated spillway to maintain an upstream stage of 3.5 feet NGVD.
- 3) Outflow Structures: 1,000 cfs pump (pump on between +5.0 and -20.0 feet NGVD and pump off -20.0 feet NGVD or when the C-9 STA/Impoundment is 4 feet deep) to C-9 STA/ Impoundment for treatment prior to deliveries to C-6, C-7, C-4 and C-2 to prevent saltwater intrusion in coastal canals. (Stormwater Treatment Area detention time requirements need to be determined. Pretreatment in reservoir may reduce size requirements of treatment area). Deliveries from NLBSA assumed to be divided as follows, 70 percent to C-9 STA/Impoundment, 10 percent to southwest STA, 10 percent to south STA and 10 percent to northeast STA.
 - 4) Southwest STA design: 100 cfs inflow pump (pump on between 5.0 and -20.0 feet NGVD in NLBSA when water supply deliveries are required to C-6, C-4 and C-2 Canals), 100 cfs gravity discharge structure to the C-6 Canal and two, 180 cfs seepage control pumps on the perimeter seepage canal.
 - 5) South STA design: 100 cfs inflow pump (pump on between 5.0 and -20.0 feet NGVD in NLBSA when water supply deliveries are required to C-6, C-4 and C-2 Canals), 100 cfs gravity discharge structure to the C-6 Canal and two, 150 cfs seepage control pumps on the perimeter seepage canal.
 - 6) Northeast STA design: 100 cfs inflow pump (pump on between 5.0 and -25.0 feet NGVD in NLBSA when water supply deliveries are required to C-9 Canal) and 100 cfs gravity discharge structure to the C-9 Canal.
 - 7) A stage divide in the C-9 Canal will be located east of the outflow structure from the C-9 STA/Impoundment. It will consist of a gated culvert with a headwater stage of 5.5 feet NGVD and a tailwater stage of 2.5 feet NGVD and a capacity of 500 cfs. It will pass Lake Okeechobee water supply deliveries to the C-9 Canal when other sources are not available.
 - 8) Canal: 800 cfs canal capacity - Water supply discharges are routed to C-4/C-2 via a canal to be located east of the Snapper Creek canal (Northwest wellfield protection canal system).
 - 9) 2-1,400 cfs delivery structures, one each at the new canal's confluence with C-6 and C-4.

Location: Reservoir would be located within the area proposed for rock mining by the Lake Belt Issue Team. It would be sited north of Miami Canal (C-6) and South of the C-9 Canal to minimize impacts to the Northwest wellfield.

Counties: Miami-Dade

Summary of modifications from D13R: Reconfigure the impermeable barrier to eliminate the appendages in the D13R design to reduce length of barrier. Maintain storage volume within the in-ground reservoir by increasing drawdown if necessary. Increase the size of the northeast treatment area to 780 acres along the Florida Turnpike. Relocate the southern treatment area and increase the size to 474 acres. Addition of new canal from northeastern STA to C-6 Canal.

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Assumptions and related considerations:

- 1) No adverse effect of a subterranean wall on Miami-Dade County's NW wellfield.
- 2) Treatment facility needed if stored water is backpumped to the Everglades.
- 3) All water quality considerations will be addressed regarding releases from the reservoir to the water supply wellfields.
- 4) Impacts on the cone of influence of the Northwest Wellfield and its effect on wetland mitigation around the wellfield.
- 5) Limestone Filter Treatment system within the NLBSA may be developed through use of compartmentalization of rock mining excavation pattern.
- 6) Telemetry systems will be required for all operable structures and pump stations.
- 7) Any specific water quality considerations regarding capture of C-6 basin runoff will be addressed during the detailed design stage.

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Water Preserve Area Feasibility Study

Component ZZ

Geographic Region: Water Conservation Area -Water Preserve Area - Lake Belt

Component Title: Divert WCA 3 flows to Central Lake Belt Storage Area – SEE WPA COMPONENT MAP 10

Purpose: Capture excess in Water Conservation Area 3A (WCA 3A) and WCA 3B to reduce stages above target stages in Water Conservation Area 3 and to divert water through modified structures at S-9 and S-31 to the Central Lake Belt Storage Area via the L-33 borrow canal.

Operation: When surface water in WCA 3B exceeds target depths by 0.1 feet, it will be diverted to the Central Lake Belt Storage Area via the L-33 borrow canal. When surface water in WCA 3A near S-9 exceeds target depths by 1.0 foot, water will be diverted to the Central Lake Belt Storage Area via the L-33 borrow canal.

Design:

Outflow Structures - 500 cfs structure @ 2.0 feet of head (new structure) at S-9 (WCA 3A).

700 cfs structure (modify existing S-31 if necessary) (WCA 3B)

Location: The eastern levees of WCA 3.

Counties: Broward and Miami-Dade

Summary of modifications from D13R: No change from D13R

Assumptions and related considerations:

- 1) Prioritization of use of Central Lake Belt Storage Area water.
- 2) Telemetry systems will be required for all operable structures and pump stations

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Water Preserve Area Feasibility Study

Component S

Geographic Region: Water Preserve Area – Miami-Dade County

Component Title: Central Lake Belt Storage Area (CLBSA)– SEE WPA COMPONENT MAPS 9 and 10

Purpose: In-ground reservoir to receive excess water from Water Conservation Areas (WCA) 2B, 3A and 3B. The in-ground reservoir, with perimeter seepage barrier, will allow storage of large quantities of water without groundwater seepage losses in this highly transmissive region. The water stored in CLBSA will be provided to 1) North East Shark River Slough (NESRS), 2) Water Conservation Area 3B, and 3) to supply flows to Biscayne Bay when available.

Operation: Inflows from the L-33 borrow canal (Component ZZ) are through a 1,500 cfs pump. Inflows cease when stages reach approximately elevation 21.0 feet NGVD (16 feet above adjacent land elevation).

Outflows for water deliveries are pumped through a polishing marsh cell prior delivery to NESRS via the L-30 borrow canal and a reconfigured L-31 N borrow canal (Component U). Deliveries of water to NESRS to meet targets will occur when NESRS drops below trigger levels and target hydroperiods simulations call for NESRS to be inundated. CLBSA delivers water to WCA 3B through a polishing marsh cell via the L-30 borrow canal to inundate the eastern area of WCA 3B to a 6 inch depth when triggers call for deliveries. This delivery occurs when WCA 3B drops below 6 inches above ground and target hydroperiods simulations indicate inundation in WCA 3B. When available, outflows will be directed to Biscayne Bay through discharges to Snapper Creek at the Turnpike. SEE WPA COMPONENT MAP 10

Water supply from the reservoir can be withdrawn down to elevation –28.0 feet NGVD (up to 36 feet of working storage & maximum head on seepage barrier).

Prioritization of Operations: If water levels in the CLBSA are from between +21.0 feet NGVD and -25.0 feet NGVD, flows will be discharged to NESRS. If water levels in the CLBSA are from between 21.0 feet NGVD and -20 feet NGVD, flows will be discharged to WCA 3B. If water levels in CLBSA drop to levels between –20 feet NGVD and -28 feet NGVD, discharge will be limited to the NESRS only to avoid water shortage restrictions.

The storage area is 3,958 acres in size and is used to capture flows above NSM levels within WCA's 2B, 3A and 3B. (Note: SFWMM simulation assumes 5,120 acres of surface area. To simulate equivalent working storage volumes, the simulated water levels are slightly lower from those prescribed here.)

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Water Preserve Area Feasibility Study

Design:

- 1) Reservoir: 3,958 acres with subterranean seepage barrier extending down 120 feet below ground around the perimeter to enable drawdown during dry periods, to prevent seepage and to prevent water quality impacts on the adjacent Miami-Dade NW wellfield.
- 2) Inflow Structures: (A) 1,500 cfs pump (pump #P-S-01) (pump on between +21.0 and -28.0 feet NGVD) from the C-6 Canal. Pump is to be operated when stages in WCA 2A, 3A and 3B are above targets in those respective WCA's. (B) 1,500 cfs gravity structure (structure # S-S-01) @ 0.5 feet head east of Krome Ave. on the C-6 Canal to deliver WCA deliveries via L-37, L-33 borrow canals and S-31. This structure will be opened whenever WCA 2B, 3A and 3B are above NSM levels and Lake Okeechobee deliveries are not being provided to the Dade-Broward Levee Borrow Canal just downstream of the structure on the C-6 Canal. This structure from C-6 Canal east of the intersection of L-33 will consist of a gated spillway to maintain an upstream stage of 7.0 feet NGVD when deliveries from the WCA's are not being made to CLBSA.
- 3) Outflow Structures: (A) 800 cfs pump (pump # P-S-02) from the CLBSA to NESRS via a 1522-acre STA and the L-30 Canal. Deliveries from CLBSA will be directed to the STA/wetland west of the CLBSA prior to discharge to NESRS and/or WCA 3B via the L-30 Canal. The pump will be operated when water elevations in NESRS trigger deliveries from CLBSA and when water levels in CLBSA are above -28 feet NGVD. (B) The STA discharges to L-30 via an 800 cfs gravity structure (structure # S-S-03) (Stormwater Treatment Area detention time requirements need to be determined. Pretreatment in reservoir may reduce the size requirements of the treatment area). The structure is operated from 0.5 feet to 4 feet of head as a flow through discharge operated simultaneously with the outflow pump from CLBSA.
- 4) 1,400 cfs (structure # S-BB-01, see also Dade-Broward Levee Component) structure located downstream of the inflow pump is to be kept closed except for deliveries to coastal canals and the South Dade Conveyance System. The structure will consist of a gated spillway to maintain an upstream stage of 7.0 feet NGVD.

Location: Reservoir would be located within the area proposed for rock mining by the Lake Belt Issue Team. It would be sited south of the Miami Canal (C-6) and north of the Northwest Wellfield Delivery canal to minimize the impacts to the Northwest wellfield.

Counties: Miami-Dade

Summary of modifications from D13R: Reconfigure the impermeable barrier to eliminate the appendages in the D13R design, avoid FP&L transmission line and rock processing plant and to reduce length of barrier required. Use two square miles of existing lakes and relocate the NW Wellfield Delivery Canal one mile south of those existing lakes. Maintain storage volume within the in-ground reservoir by increasing drawdown if necessary. Increase the size of the stormwater treatment area to 1522 acres.

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Water Preserve Area Feasibility Study

Assumptions and related considerations:

- 1) No adverse effect of a subterranean wall on Miami-Dade County's NW wellfield.
- 2) Treatment facility needed if stored water is backpumped to the Everglades (1522-acre STA).
- 3) All water quality considerations will be addressed regarding releases from the reservoir to the water supply wellfields.
- 4) Impacts on the cone of influence of the Northwest Wellfield and its effect on wetland mitigation around the wellfield.
- 5) Limestone Filter Treatment system within the Reservoir may be developed through use of compartmentalization of rockmining excavation pattern.
- 6) Telemetry systems will be required for all operable structures and pump stations.

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Water Preserve Area Feasibility Study

Component T

Geographic Region: Water Preserve Area – Miami-Dade County

Component Title: C-4 Structures

Purpose: Proposed structures (East and West) would provide two separate benefits. The West structure would control water levels in the C-4 Canal at a higher elevation to reduce seepage losses from the Pennsuco Wetlands and areas to the west of the structure. The East structure would reduce regional system water supply deliveries by diverting dry season stormwater flows to the C-2 Canal to increase recharge in several nearby coastal wellfields.

Operation: The West structure would maintain water levels at 6.5 feet NGVD for seepage control purposes and be capable of passing flood flows with a minimum of head loss and supplying water to the C-4 basin to meet water supply demands. The East structure would divert dry season stormwater flows from the western C-4 basin to the C-2 Canal to recharge the wellfields in the eastern C-2 Canal basin.

Design: West Structure - An operable lift-gate with an overflow elevation of 6.5 feet NGVD and a capacity of approximately 400 cfs (final design specifications will be determined in detailed design and hydrologic and hydraulic modeling in the future).

Location: Just downstream of the Dade-Broward Levee in the C-4 Canal.

East Structure - An operable lift-gate with an overflow elevation of 4.5 feet NGVD and a capacity of approximately 600 cfs (final design specifications will be determined in detailed design and hydrologic and hydraulic modeling in the future).

Location: In the C-4 Canal, just downstream of the confluence of the C-2 and C-4 Canals.

Summary of modifications from D13R: No change from D13R

Assumptions and related considerations:

- 1) Benefits to WCA-3B associated with improved C-4 seepage control are directly related to the proposed G-356 pumpage (Modified Water Deliveries).
- 2) Head losses across the proposed structures will not inhibit passing flood releases when necessary.
- 3) A pump may be associated with the West structure if back pumping the C-4 basin runoff to the Bird Drive Recharge Area becomes a component of the final alternative.

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Water Preserve Area Feasibility Study

Component U

Geographic Region: Water Preserve Area - Miami-Dade County

Component Title: Bird Drive Recharge Area - SEE WPA COMPONENT MAP 11

Purpose: Captures runoff from the western C-4 Canal basin and accepts inflows from the West Dade Wastewater Treatment Plant (WDWTP) to recharge groundwater and reduce seepage from the Everglades National Park (ENP) buffer areas by increasing water table elevations east of Krome Ave. The facility will also provide C-4 flood peak attenuation and water supply deliveries to the South Dade Conveyance System and Northeast Shark River Slough.

Operation: Inflows from western C-4 basin and the WDWTP will be pumped into the proposed Recharge Area. C-4 runoff in excess of 200 cfs will be discharged eastward. Inflows from the WDWTP will be continuous when the Recharge Area depth is equal to or less than 3 feet above ground. WDWTP discharges will be to deep injection wells if the depth is greater than 3 feet. A seepage management system will be operated around the east and southern perimeters of the Recharge Area. Recharge Area outflows will be prioritized to meet 1) groundwater recharge demands, 2) South Dade Conveyance System demands and 3) North East Shark River Slough demands, when supply is available. Regional system deliveries will also be routed through the seepage collection canal system of the Bird Drive Recharge Area to the South Dade Conveyance System, which should reduce seepage from areas west of Krome Avenue.

Design:

2,877-acre reservoir with a maximum depth of 4 feet.

Inflow structure: 200 cfs pump (to be resized as needed) from the C-4 Canal.

Outflow structure:

Water supply: Gravity structure with 200 cfs capacity at 2 feet of head.

Seepage Collection System: up to 300 cfs pump to control seepage collection canal at 5.3 feet NGVD. Seepage is returned to Bird Drive Recharge Area.

Delivery System: 800 cfs pump to provide regional system deliveries to SDCS.

800 cfs canal capacity, in addition to the canal required for the Bird Drive seepage collection system, to pass the regional system deliveries to the South Dade Conveyance System.

5 miles of canal with 800 cfs capacity between Bird Drive seepage collection system to C-1W just east of Krome Ave.

Relocate S-338 east of Krome Ave. and delivery canal.

Location: Northwestern 4 sections in Bird Drive basin. This site was identified during the Water Preserve Area Land Suitability Analysis.

Counties: Miami-Dade

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Water Preserve Area Feasibility Study

Summary of modifications from D13R: Reduce reuse flows to Bird Drive Impoundment by one half and distribute those flows based on Miami-Dade County's proposed monthly distribution. Increase the C-4 Canal conveyance capacity through widening and/or deepening.

Assumptions and related considerations:

- 1) Treatment facility needed if seepage collected does not meet Everglades standards.
- 2) Telemetry systems will be required for all operable structures and pump stations.
- 3) Flood protection in the basin will not be removed by the introduction of the West Dade Wastewater Treatment Plant inflows.
- 4) Regional-scale simulation using SFWMM 2mi X 2mi resolution is rather coarse for this local-scale feature. Specific land elevations in the Bird Drive Recharge Area are not precisely mimicked due to location and scale considerations in the SFWMM.

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Water Preserve Area Feasibility Study

Component BB

Geographic Region: Water Preserve Area - Miami-Dade County

Component Title: Dade Broward Levee / Pennsuco Wetlands - SEE WPA
COMPONENT MAP 10

Purpose: Reduce seepage to the east from the Pennsuco wetlands and southern Water Conservation Area (WCA) 3B and enhance hydroperiods in the Pennsuco. Also an improved Dade Broward Levee will enhance recharge to Miami-Dade County's Northwest Wellfield.

Operation: Improvements to the Dade-Broward Levee and associated conveyance system will reduce seepage losses to the east and provide recharge to Miami-Dade County's Northwest Wellfield. Seepage reduction will enhance hydroperiods in Pennsuco wetlands and hold stages higher along southeastern WCA 3B. Recharging the conveyance features of the Dade-Broward levee from the regional system deliveries provides recharge to Miami-Dade County's Northwest Wellfield. Treatment areas will be provided to meet all water quality standards required, if necessary.

Design:

- 1) Improve the Dade-Broward Levee: Construct or improve the existing levee (levee # L-BB-01) to a five-foot height with a ten-foot top width and the east borrow canal with 14 feet depth, 110 foot bottom width, 1 to 1 (vertical to horizontal) side slopes, and improve existing conveyance to 1400 cfs or greater.
- 2) 600 cfs divide structure (structure # S-BB-01) in the C-6 Canal for regional system deliveries to C-6, C-7, C-4, and C-2 Canals and the South Dade Conveyance System. This structure can control C-6 Canal water levels so that deliveries are able to be directed to the Dade-Broward levee borrow canal, the Central Lake Belt Storage Area (CLBSA) or be released to the canals above.
- 3) 1400 cfs bypass structure (structure # S-BB-02) and proposed canal (canal # C-BB-02) from the C-6 Canal to the Dade-Broward Levee will send Lake Okeechobee deliveries south to provide recharge from the regional system via the improved US Highway 27 west borrow canal.
- 4) 1400 cfs gravity structure (structure # S-BB-04) in the Dade-Broward Levee borrow canal to be located south of the southern end of the Northwest Wellfield. Deliveries will be made to maintain elevation 5 feet NGVD at this structure when the conveyance canal is below elevation 5.0 feet NGVD.
- 5) 800 cfs gated culvert (structure # S-BB-03) directs deliveries (300 cfs) south from L-30 to the NW Wellfield Protection Canal via the existing Dade-Broward Levee borrow canal and allows discharge from the CLBSA north to the L-30 Canal for deliveries to NE Shark River Slough.

Location: Dade-Broward Levee, Pennsuco Wetlands, WCA-3B, the Central Lake Belt Storage Area and Miami-Dade County's Northwest Wellfield.

Counties: Miami-Dade

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Water Preserve Area Feasibility Study

Summary of modifications from D13R: Relocate the gravity structure in the Dade-Broward Levee borrow canal about 1.7 miles south to improve hydropatterns in the Pennsuco wetlands. Send Lake Okeechobee water supply deliveries south via the Dade-Broward levee canal instead of further east along the turnpike canal.

Assumptions and related considerations:

- 1) Wellfield protection must be maintain through recharge of acceptable water quality.
- 2) Secondary structures within the recharge canals may be needed to provide seepage reduction and wellfield recharge desired.
- 3) The stage maintained in the Dade-Broward Levee conveyance canal is subject to change.

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Water Preserve Area Feasibility Study

Component EEE

Geographic Region: Water Conservation Area -Water Preserve Area - Lake Belt

Component Title: Flows to Eastern Water Conservation Area (WCA) 3B from Central Lake Belt Storage Area – SEE WPA COMPONENT MAPS 6 and 10

Purpose: Captured excess surface water and seepage from Water Conservation Area 2B, 3A and 3B in Central Lake Belt Storage Area (CLBSA) delivered to eastern WCA 3B during dryouts.

Operation: Deliveries will be made to maintain 6 inch depths in WCA 3B if NSM hydroperiod indicate WCA 3B water levels should be at or above 6 inches and water is available in CLBSA. Deliveries from CLBSA will occur through a wetland treatment cell and the L-30 borrow canal to a spreader swale system in the eastern areas of WCA 3B.

Design: 500 cfs pump from L-30 to eastern portion of WCA 3B.
 Spreader Swale along eastern WCA 3B to convert 500 cfs to sheetflow
 Upgrade of 1,500 cfs from CLBSA deliveries NESRS to 2000 cfs to
 accommodate additional flows to WCA 3B (also seen in component S5)

Location: The discharge point from L-30 borrow canal to WCA 3B is at the bend in the canal and is approximately 4.5 miles south of the intersection of the L-30 and the C-6 Canal.

Counties: Miami-Dade

Summary of modifications from D13R: No change from D13R

Assumptions and related considerations:

- 1) Prioritization of use of Central Lake Belt Storage Area water.
- 2) Telemetry systems will be required for all operable structures and pump stations.